

MISSOURI DEPARTMENT OF CONSERVATION



MARCH/APRIL 2023

Xplor



MISSOURI'S
FLOWER
FARMERS

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A pair of wild turkeys strut their stuff, hoping to charm a mate. Youth spring turkey hunting season runs April 1–2. Regular spring turkey season runs April 17–May 7. For permits, rules, and other details, visit short.mdc.mo.gov/Ztu.

📷 by Noppadol Paothong



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ON THE COVER

Common Eastern Bumblebee

by Noppadol Paothong

STRANGE BUT TRUE

Your guide to all the
UNUSUAL, UNIQUE,
AND **UNBELIEVABLE**
stuff that goes on in nature



EASTERN WHIP-POOR-WILLS time their egg laying so their chicks hatch about 10 days before a full moon. As the moon gets brighter each night, the parents are able to hunt longer and catch more insects to feed their growing chicks.

During winter, **AMERICAN BLACK BEARS** can sleep for 100 days without eating, drinking, peeing, or pooping. One of the first things a bear does when it wakes up is go to the bathroom.



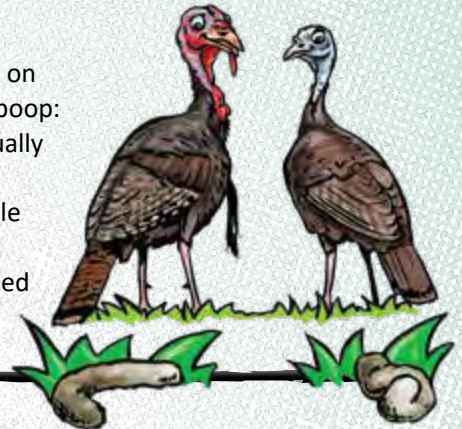
Baby **RIVER OTTERS** can't swim. So when they're about 12 weeks old, mama otters start swimming lessons. Pups aren't enthusiastic students — most seem scared of water — so mom has to drag them in and teach them how to float, paddle, and dive.



PADDLEFISH may grow 7 feet long and weigh 150 pounds. What does a fish that big eat? Itty-bitty animals that drift as plankton. A paddlefish swims with its mouth open, and plankton is trapped in the fish's throat by an organ that acts like a strainer.



Here's the scoop on **WILD TURKEY** poop: Male turkeys usually leave J-shaped droppings. Female turkeys usually leave spiral-shaped droppings.



What does a **COOPER'S HAWK** do after it catches dinner? It gives it a big squeeze. Unlike most raptors that kill with a bite from their beaks, Coops dispatch prey by clamping down on it — over and over if needed — with their needle-sharp talons.

HERCULES BEETLES make human weight lifters look like wimps. The brawny bugs can push press 100 times their weight. To do the same, an Olympian would need to lift more than 20,000 pounds!



WHAT IS IT?

DON'T KNOW? Jump to page 21 to find out.

- 1 My bells, they don't ring ...
- 2 ... when they shake in the spring.
- 3 They're more for the bling ...
- 4 ... to attract things that sting.



Ask an OPOSSUM

Hi! I'm Phi, *Xplor's* mail possum. I know a lot about nature. If you have a question, email me at AskPhi@mdc.mo.gov.



Q: Why do turkeys have big, puffy tails?

— From Penelope, age 7

A: Wild turkeys use their tails to get girlfriends. When a male turkey wants to show off, he droops his wings, puffs out his chest, fans out his tail, and struts around. It looks funny to us, but not to a female turkey. You see, turkey gals like guys who know how to shake their tail feathers. If she's impressed by his appearance, she'll choose him for her mate.

HOW TO

LEAVE NO TRACE

After you visit a wild place, do you think anyone would be able to tell you were there? Sometimes our love for nature can take a toll. We accidentally leave litter on trails or trample wildflowers in a meadow. The idea behind “leave no trace” is to practice a few simple guidelines so that you leave only footprints, take only photos, and help keep wild places wild.

KNOW BEFORE YOU GO

Go online to read the rules for the place you’re going to visit. Some wild areas don’t allow certain activities, such as hunting, camping, or mushroom gathering. Be sure to pack all the food, water, and gear you will need for your adventure. Last, consider visiting during off-peak times.

PICK THE RIGHT PATH

If the wild area you’re exploring has a hiking trail, stay on it. Going off the trail is fine in certain cases, but when lots of people do so, it creates a spiderweb of confusing paths. When you do venture off the trail, watch your step so you don’t trample wildflowers or slow-moving critters.



PACK OUT WHAT YOU PACK IN

Take along a trash bag. Use it to pack out your trash and any litter you find along the way. Get in the habit of putting your gear back in your pack as soon as you're done using it. That way, you'll be less likely to misplace it and leave it behind.

BE KIND

As popular as wild places have become, it's likely you'll be sharing them with other people. Some folks like to hear nature when they're outside, so keep your voice low and your portable speakers off. Keep dogs on a leash and clean up after them. If you're hiking downhill, it's courteous to step off the trail for folks who are hiking up.

RESPECT WILD THINGS

Give wild critters plenty of space, especially when they're raising their babies. And never feed wild animals. It makes them lose their fear of people, which usually doesn't end well for the animals or the people.

BE CAREFUL WITH FIRE

A camping stove is less likely to start a wildfire, and it won't leave behind unsightly ashes. If you must build a campfire, keep it small and use an existing fire ring. Gather only dead wood that's already on the ground. Never bring wood from home. It can carry tree-killing pests.

LEAVE WHAT YOU FIND

It's tempting to pick pretty flowers, collect bird feathers, and take rocks home as souvenirs. But doing so is illegal on some areas. And doing it anywhere steals the chance from someone else to see the same beautiful things. Snapping a photo is always a better option.

FLOWER Farmers



Fuzzy, buzzy, hard-working, and helpful, bumblebees are the superstars of flower farming.

Ahh-choo! The dusty yellow stuff that makes you sneeze is called pollen. For a plant to make fruits and seeds, its pollen must move from one part of a flower to another. Some plants use wind to move pollen. But many plants rely on insects. And no insect is built better for pollen delivery than a fuzzy, buzzy bumblebee.



Un-**bee**-lievable!

Bumblebees must eat almost constantly. Even with a full stomach, a bee is only about 40 minutes away from starvation.

Brown-belted bumblebee



What's All the Buzz About?

With most plants, an insect only needs to touch a flower to get covered in pollen. But a few plants hide pollen deep inside their flowers. Luckily, bumblebees have a way to unlock this secret stash.

When a bumblebee lands on a pollen-protective plant, it uses its jaws to clamp down on a flower. Then the bee flexes its flight muscles, causing a loud, whining buzz. The buzz travels through the bee's body and shakes loose the pollen.

Potatoes and tomatoes are a few of the plants that require buzz pollination. So the next time you dunk a french fry in ketchup, remember the humble bumble.

Hardy and Hard-Working

Because they're so fuzzy, bumblebees can survive colder weather better than many other insects. They're often the first bees buzzing around in late winter — sometimes as early as February — and the last bees to disappear in the fall.

Bumblebees aren't finicky when it comes to flowers. They visit many different kinds to gather the nectar and pollen they eat to survive. Unlike honeybees — which are native to Europe, not the U.S. — bumblebees don't make enough honey to last through the winter. So when flowers die back in the fall, most bumblebees do too.

To collect enough food for themselves and their sisters, a bumblebee may visit nearly 500 flowers each day!



Un-bee-lievable!

Unlike honeybees (which have barbed stingers), a bumblebee can use its smooth stinger again and again.



The Circle of Life



1 A bumblebee colony begins when a queen wakes in spring from a long winter slumber. She buzzes about feeding on nectar and searching for a place to nest. Sometimes it's a hole in a tree or a crack in a cliff. Usually it's an abandoned rodent burrow.

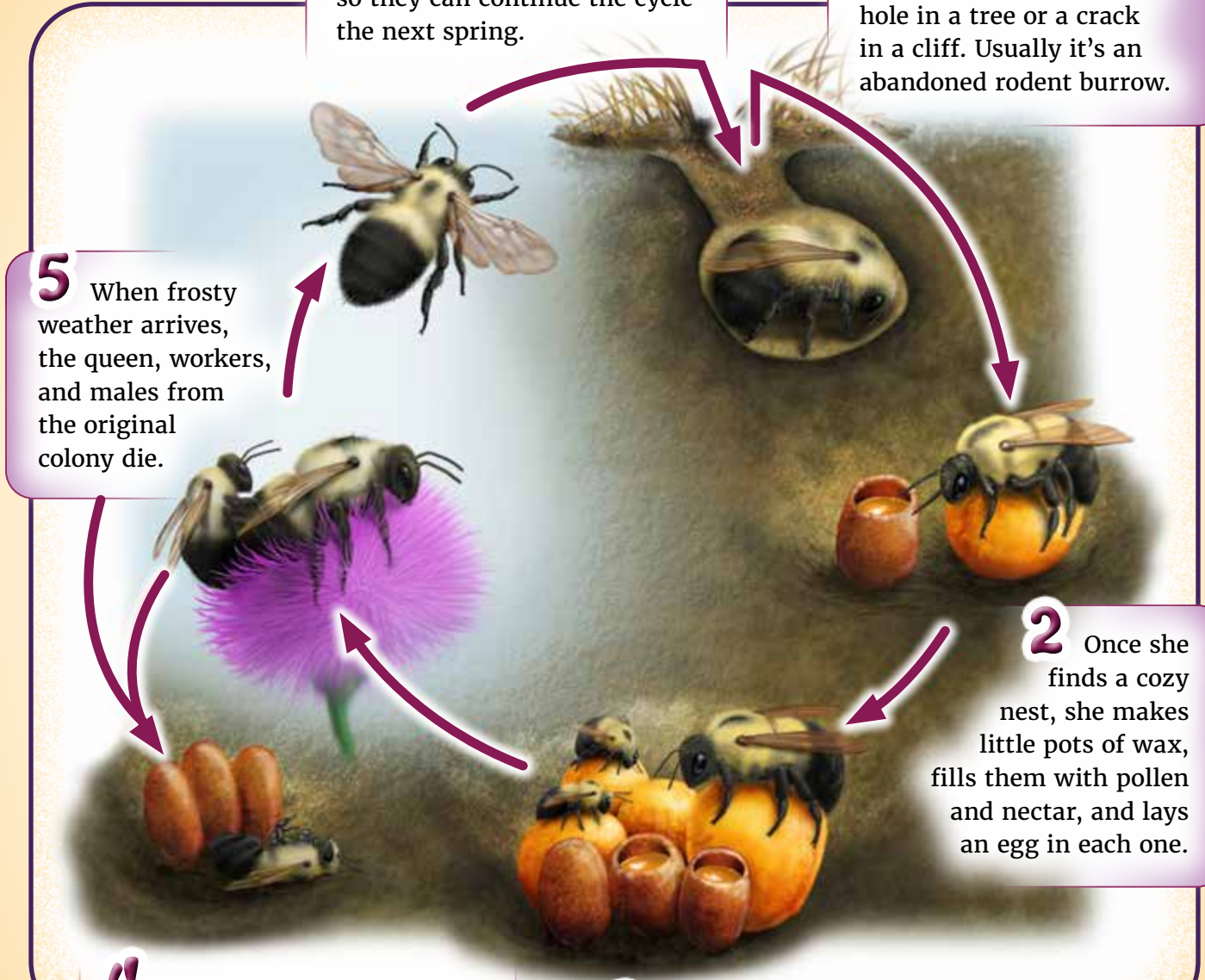
6 Queens who left the colony find a cozy spot to spend winter and go dormant so they can continue the cycle the next spring.

5 When frosty weather arrives, the queen, workers, and males from the original colony die.

2 Once she finds a cozy nest, she makes little pots of wax, fills them with pollen and nectar, and lays an egg in each one.

3 The eggs hatch into wiggly larvae. The queen gathers pollen and nectar to feed them. The larvae grow, spin cocoons, and emerge as worker bees. Once they start working, the queen stays inside the nest to focus on laying eggs, and the colony soon swells with 50 to 500 workers.

4 By mid-summer, the queen lays eggs that turn into males as well as other queens. After leaving the nest, the males and queens mate with bumblebees from other colonies.



Colony Careers

In a bumblebee colony, each bee has a job.

The queen starts the colony and lays lots and lots of eggs. She is larger and lives longer than the other bumblebees.

Workers are female bees that gather pollen and nectar, defend the nest, and care for the queen and babies. They have special structures on their hind legs, called pollen baskets, that they pack with pollen to carry back to the colony.

Drones are male bees. They don't do much except mate with queens from other colonies. If you find a bumblebee sleeping on a flower in late summer, it's probably a drone.

Un-bee-lievable!

If the nest gets too hot, workers gather at the entrance and flap their wings to fan out the hot air.

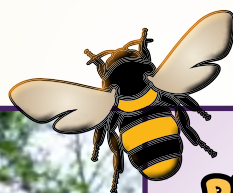


Common eastern bumblebees

SCOTT CAMAZINE / SCIENCE PHOTO LIBRARY




Un-bee-lievable!

One out of every three bites of food you eat has help from pollinators like bumblebees.



Plan BEE

Bumblebees need our help! Many are disappearing in alarming numbers. That's the bad news. The good news is you can do things in your own backyard to help bring back the buzz.

-  Plant a variety of flowers so something is blooming from early spring through late fall. Native wildflowers are best. For ideas about what to plant, buzz over to grownative.org.
-  Ask your parents to avoid using pesticides. Not only do these chemicals kill pests, but they also kill bumblebees and other helpful insects.
-  Mow your lawn less often. A few flowering weeds in a desert of grass offer an oasis for thirsty bees.



WALLEYE

SENSITIVE SKIN

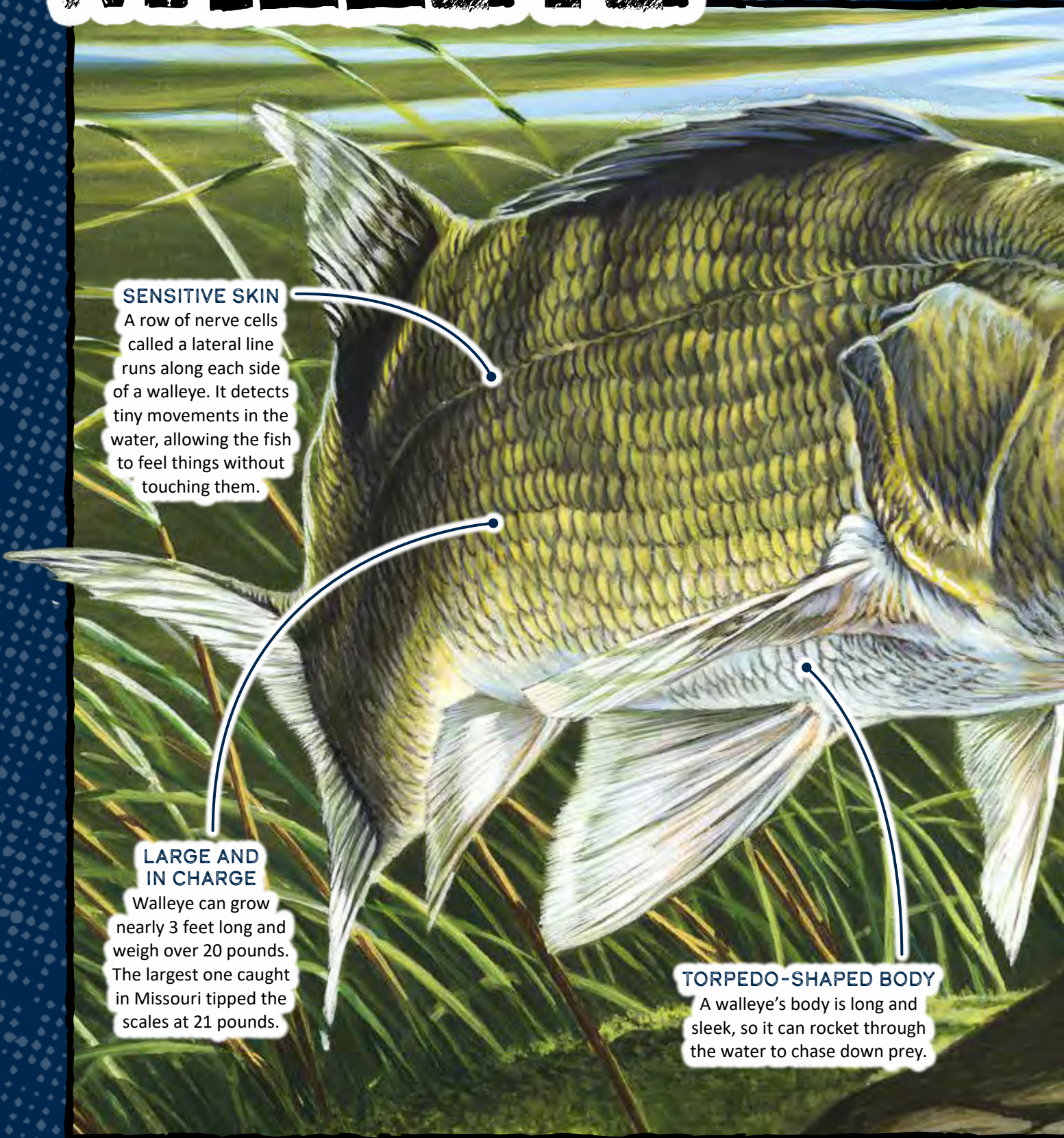
A row of nerve cells called a lateral line runs along each side of a walleye. It detects tiny movements in the water, allowing the fish to feel things without touching them.

LARGE AND IN CHARGE

Walleye can grow nearly 3 feet long and weigh over 20 pounds. The largest one caught in Missouri tipped the scales at 21 pounds.

TORPEDO-SHAPED BODY

A walleye's body is long and sleek, so it can rocket through the water to chase down prey.





NIGHT-VISION GOGGLES

Reflective pigments in the inner eye help walleye see well at night and in murky water.

ARMED TO THE TEETH

A walleye's jaws are spiked with dagger-sharp teeth. When the toothy trap snaps shut, there's no hope of escape for what's inside.

ANIMAL ARCHITECTS

No hammer? No nails? No problem.

Some critters don't have a home. They simply wander around and wherever they stop, that's where they sleep. Others — the ones this story is about — build impressive shelters in which to rest or raise a family. Even without boards or blueprints, these master builders finish the job just fine.





PILEATED WOODPECKER

Rat-a-tap-tap! A woodpecker's handiest tool is its beak. It isn't sharp and pointy. If it were, it would get stuck a lot. Instead, the beak is shaped like a chisel, which is perfect for chipping away at wood.

Woodpeckers raise their babies in holes they hammer into trees. When excavating a nest, the head-banging birds search for soft wood that is already dead or rotting. This way, their cavity creation doesn't harm the tree.

When the woodpecker family moves out, other critters move in. Squirrels, bats, screech-owls, wood ducks, and bluebirds are just a few of the animals that make their homes in abandoned woodpecker holes.

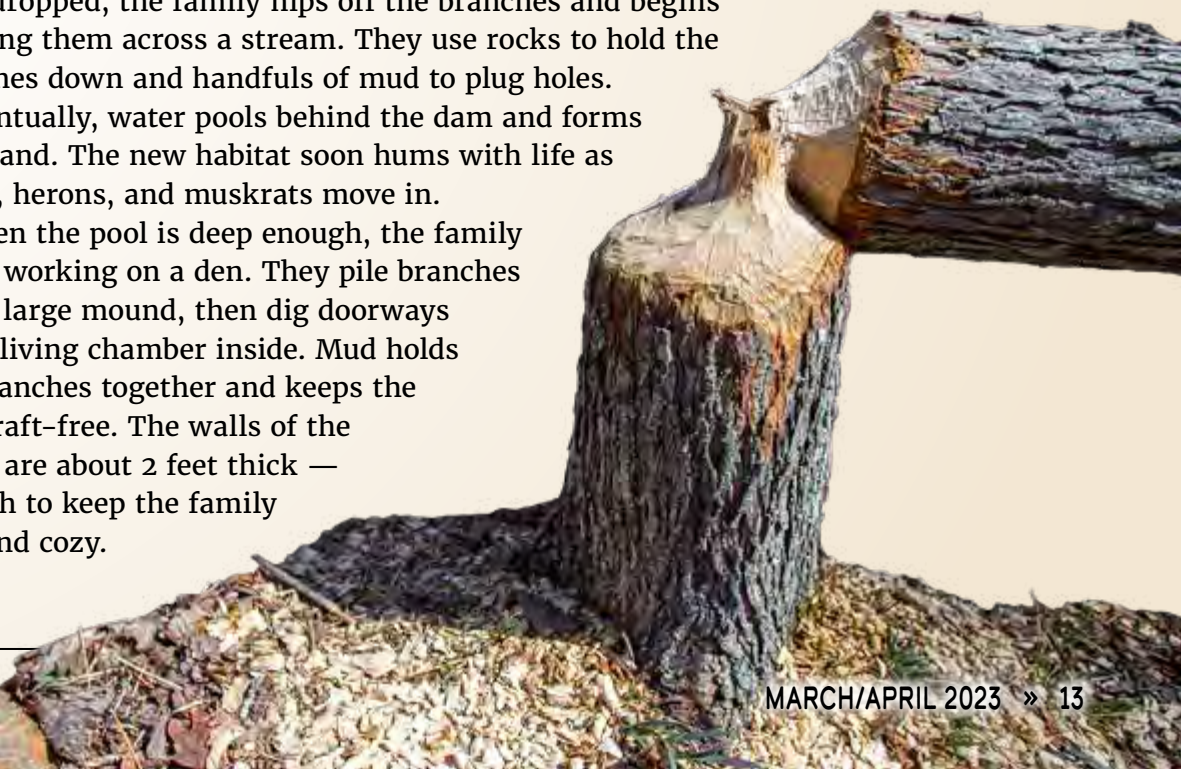
AMERICAN BEAVER

When it comes to critter construction, beavers are in a league of their own. With sticks, stones, and mud, the buck-toothed builders fashion dens and dams. Building is a family business. Mom, pop, and the kids all work together on projects.

Using only its teeth, a beaver can cut down a tree that's thicker than your thigh in under 5 minutes. Once a tree has been dropped, the family nips off the branches and begins stacking them across a stream. They use rocks to hold the branches down and handfuls of mud to plug holes.

Eventually, water pools behind the dam and forms a wetland. The new habitat soon hums with life as ducks, herons, and muskrats move in.

When the pool is deep enough, the family starts working on a den. They pile branches into a large mound, then dig doorways and a living chamber inside. Mud holds the branches together and keeps the den draft-free. The walls of the house are about 2 feet thick — enough to keep the family safe and cozy.



MUD DAUBER

This wasp isn't making mud balls to play *buzzketball*. She's gathering building supplies for a nursery.

The wasp, known as a mud dauber, flies balls of mud, one by one, back to where she wants to build a nest. There, on the side of a building, cave, or cliff, she molds the mud into hollow tubes. Once she finishes a tube, she catches small spiders and stuffs them inside. Each spider gets stung so it can't move.

The mama wasp lays an egg in each tube and seals it up with a door made of mud. When the egg hatches, the baby wasp will have a pile of stunned spiders to eat and a safe, cozy nursery in which to grow.



O.P. SHARMA, BUGWOOD.ORG



YELLOW GARDEN SPIDER

Like eight-legged anglers, yellow garden spiders weave silken nets to catch airborne insects. The spider hangs in the center of its web, waiting patiently for bugs to fly by. When the spider feels the web quiver, it knows dinner has arrived.

Spinning a web is a never-ending job. Garden spiders eat their webs each night and re-spin new ones before dawn. This isn't an easy feat. Large webs may contain nearly 60 feet of silk!

The silk is tiny but tough. A single strand long enough to circle the Earth would weigh less than two pounds. Ounce for ounce, however, spider silk is nearly as strong as steel.

RUBY-THROATED HUMMINGBIRD

It takes tons of work to build a home, and mama hummingbirds do it without any help from their mates. A mother hummer begins by weaving a cozy, cup-shaped nest out of thistles, cattails, and dandelion fluff. To anchor the nest to a branch and hold the whole thing together, she collects silk from spider webs. To hide the nest from predators, she sticks moss and lichens to the sides.

When the nest is finished, it's about the same size as a large sewing thimble. There's hardly enough room for both of her babies! Luckily, spider silk stitched into the nest allows the sides to stretch as the baby hummers grow.



CLIFF SWALLOW

Cliff swallows gather mouthfuls of mud — but not to eat. (That would be gross.) They use their beaks to mold the mud into pea-sized pellets. Then they fly away and stick the pellets onto the side of a bluff, bridge, or barn.

Blob by blob, the winged workers build a volcano-shaped nest in which to raise their babies. It takes about 1,000 pellets — and 1,000 trips to the mudhole — to finish their home.

Cliff swallows like to nest with lots of neighbors nearby. In fact, it's not unusual for several hundred — or even several thousand — nests to be crowded together on a single bluff or bridge!



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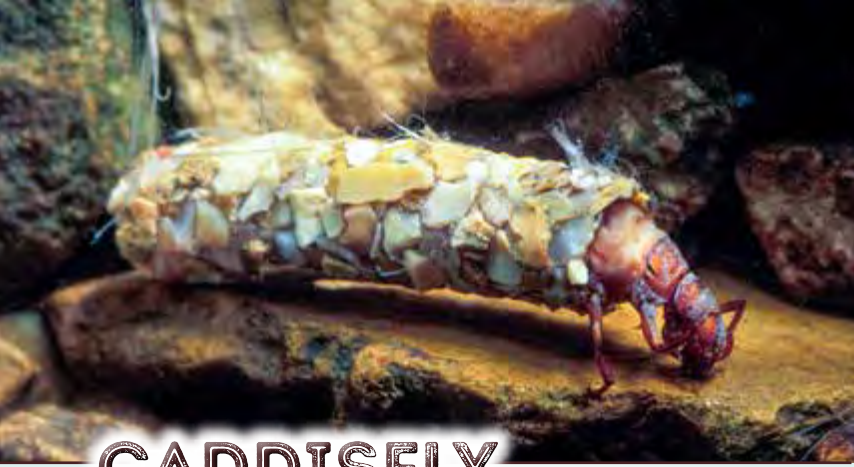
BALD EAGLE

Bald eagles build some of the largest nests of any bird. They're usually about 6 feet wide and 3 feet tall, but they can get *much* larger.

When a young eagle couple wants to start a family, their first nest is relatively small. But each year, rather than building a new nest from scratch, the couple simply add more sticks to their existing structure. Over time, the sticks pile higher, and their nest becomes a ginormous mansion of branches.

An eagle nest in Florida measured 10 feet across and 20 feet deep. One in Ohio was used for 34 years. When the tree it was in finally fell down, the nest weighed more than 4,000 pounds!





CADDISFLY

Pick up some rocks from nearly any Ozark stream and — if you know what to look for — you'll probably find a caddisfly or two.

Caddisfly babies, or larvae, are titans of tiny home construction. They piece together pebbles, sand, and leaves to fashion funky, tube-shaped homes. Some caddisflies anchor their homes to rocks. Others wear their homes like a shell as they crawl along the bottom of a stream.

The home offers camouflage, protects the baby's squishy belly, and adds weight so the little insect isn't swept away by swift currents. Caddisfly larvae live in their cases until they swim to the surface and turn into air-breathing, moth-like adults.

DEVIL CRAYFISH

Crayfish need water to breathe, but not all of them live in streams. Some, like this devil crayfish, burrow down to find water underground.

This tiny tower of mud is the front door to a devil crayfish's house. As it digs, the crayfish uses its legs and mouthparts to roll mud into tiny blobs. It carries the blobs to the surface and stacks them up to form small towers, which are called chimneys.

Although most burrows go only a few feet underground, crayfish can be exceptional excavators. Some tunnels, particularly in dry areas, may run more than 15 feet deep!

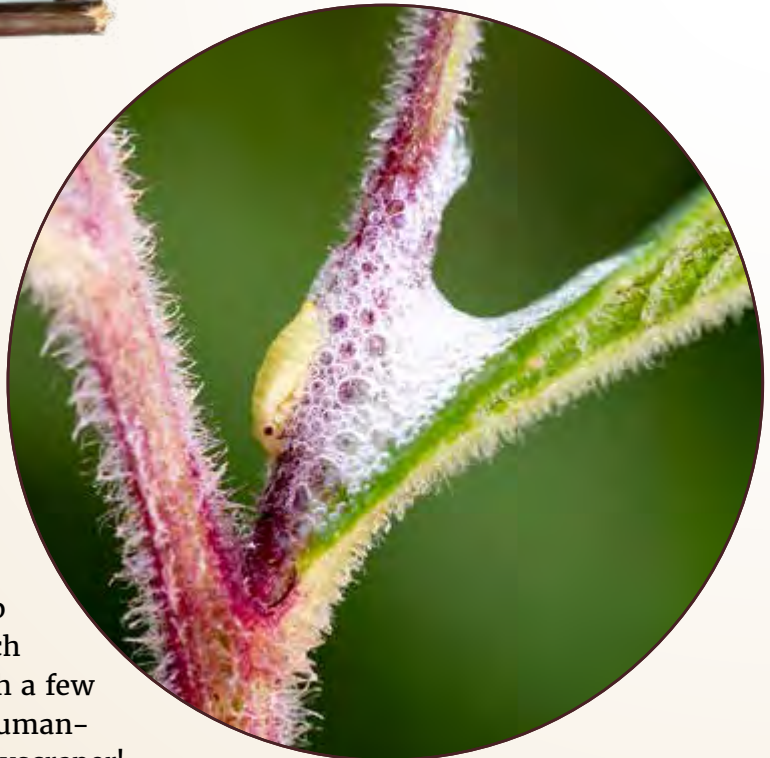


SPITTLEBUG

Forget sticks, stones, and mud. Some critters make their own building materials.

Baby spittlebugs suck sap from plants and turn it into bubbly, spit-like foam. The bugs snuggle inside the slobber, which protects them from predators and parasites. It also keeps them cool when it's hot and damp when it's dry. Although the foam looks like spit, it's not. It actually comes from the spittlebug's *other* end.

From these humble beginnings, spittlebugs — also called froghoppers — grow into the high-jump champions of the animal kingdom. The quarter-inch insects can skyrocket 27 inches into the air. Though a few inches doesn't sound impressive, consider this: A human-sized spittlebug could easily hop over a 60-story skyscraper!





BALTIMORE ORIOLE

Female orioles are nature's knitters. They weave hanging, sock-like nests that dangle dangerously from the outermost branches of trees. Biologists believe this protects the nests from chubby raccoons and egg-eating snakes.

It takes a week or two to build a nest. First the female gathers construction materials: strips of grasses, vines, and other plant fibers, hair, twine, even fishing line. Next, she twists long fibers around a branch to create support strands for the rest of the nest. Then she uses her pointy beak to weave other fibers in and out of the anchor lines until a pouch is formed. Last, she lines the nest with cattail fluff and downy feathers to cushion the eggs. Though the nest looks flimsy and delicate, it can cradle a mama bird and up to seven eggs.



WOODCHUCK

Woodchucks — aka groundhogs — are better than bulldozers when it comes to pushing dirt around. These chonky members of the squirrel family dig a network of tunnels and underground chambers in which to hide, hibernate, and raise their babies.

The tunnels may stretch nearly 80 feet long. During extensive excavations, a woodchuck can remove 700 pounds of soil! Woodchucks are so good at digging, they can even close their ears to keep out dirt.

When woodchucks move out of their burrows, other animals move in. Foxes, weasels, badgers, skunks, rabbits, and opossums all take shelter in woodchuck burrows — sometimes while the woodchuck is still living there.



© REJEAN BEDARD | ISTOCKPHOTO.COM

Bee-Fuddled

Missouri is home to over a dozen kinds of bumblebees. But telling one from another takes practice. Many species look a lot alike!

The trick is to study the yellow and black patterns on each bee's head, thorax (the center part of the body), and abdomen (the back end). Pay close attention to the segments on the abdomen. Is the segment closest to the thorax yellow or black? How many segments are yellow? Also look at the thorax. Is the thorax mostly black, mostly yellow, or does it have a spot or some other marking?

INSTRUCTIONS

This field of wildflowers is buzzing with bumblebees. How many of each kind can you find? Tune up your ID skills with this puzzle, then go outside to the nearest flower garden and practice on the fuzzy, buzzy real thing.



**Brown-Belted
Bumblebee**



**Two-Spotted
Bumblebee**



**Common Eastern
Bumblebee**



**Black and Gold
Bumblebee**



**Yellow
Bumblebee**



Answers: Brown-belted bumblebee - 16, Two-spotted bumblebee - 10, Common eastern bumblebee - 6, Black and gold bumblebee - 9, Yellow bumblebee - 5

GET OUT!

FUN THINGS TO DO
AND GREAT PLACES
TO DISCOVER NATURE



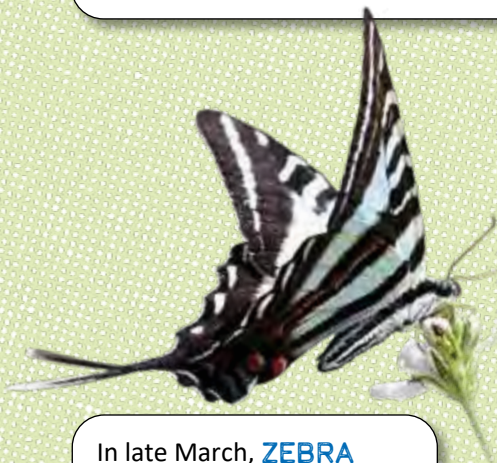
BABY BALD EAGLES HATCH in March. Many wetlands have eagle nests where you can catch a glimpse of mom and pop feeding their fuzzy hatchlings. Just don't get too close or linger too long. You wouldn't want to disturb America's feathered first family.



In April, it's easy to **CATCH ENOUGH CRAPPIE TO FILL A FRYING PAN**. Just flip a small jig out from shore. If the water's clear, send the jig deep. If it's murky, fish the shallows. When you hook one, keep fishing the same spot and you'll likely land others.



Listen for the rattling calls of **BELTED KINGFISHERS** at streams, lakes, and wetlands. The smokey-blue birds dive into water beak-first to snap up fish for breakfast.



In late March, **ZEBRA SWALLOWTAIL BUTTERFLIES EMERGE** from their cocoons and flutter around looking for nectar to guzzle. Females lay eggs on pawpaw trees, so you're more likely to spot these striped wonders if you find a pawpaw patch.



MAMA COTTONTAILS BEGIN HAVING BABIES in mid-

March. Keep dogs and cats inside so they won't harm these easy-to-catch little critters. If you find a nest of baby bunnies, leave it alone. Mom will eventually return to take care of them.



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at mdc.mo.gov/events.



WHAT
IS
IT?

— FROM PAGE 3 —



VIRGINIA BLUEBELLS

Virginia bluebells grow in woodlands and along rivers and streams across most of Missouri. In April, the low-growing plants unfurl clusters of bell-shaped flowers. The petals start off pink but turn bluish-purple as they mature. Bumblebees and newly emerged butterflies are drawn to the nectar-rich blossoms. But the insects better eat quickly! By summer, the plants wither up, leaving alive only underground roots to sprout the next spring.

GO FIND IT!



Cut out this critter card and take it with you outside.
How many of the things on the card can you find?

GRAY TREEFROG



QUICK-CHANGE ARTISTS

Gray treefrogs change color, turning gravel-gray, bark-brown, or leaf-green to blend in with their surroundings.

GET A GRIP

A treefrog's toes cling like suction cups to leaves, tree trunks, and even glass. Sticky mucus gives the frog an even better grip.

ATTENTION-GRABBING ARMPITS

Although most of a treefrog's body is nearly invisible against a baky background, the inner thighs are bright yellow or orange.

WORKING THE NIGHT SHIFT

At night, treefrogs prowl the forest canopy, hunting for insects and spiders to eat.

SPRING SINGERS

Males sing in the spring to get a girlfriend. The call is a musical, birdlike trill.

To subscribe, cancel your subscription,
or update your address, visit
mdc.mo.gov/xplor.

FREE TO MISSOURI HOUSEHOLDS

GO FIND IT! ≡

Gray treefrogs are found throughout Missouri in forests, along tree-lined rivers, and in wooded backyards. For more on these far-out frogs, hop over to mdc.mo.gov/field-guide.



GRAY-TREEFROG